SPRINT 4

Date	12 November 2022
Team ID	PNT2022TMID04650
Project Name	Smart Farmer – IOT Enabled Smart Farming Application

IOT ENABLED SMART FARMING APPLICATION

SPRINT DELIVERY – 4

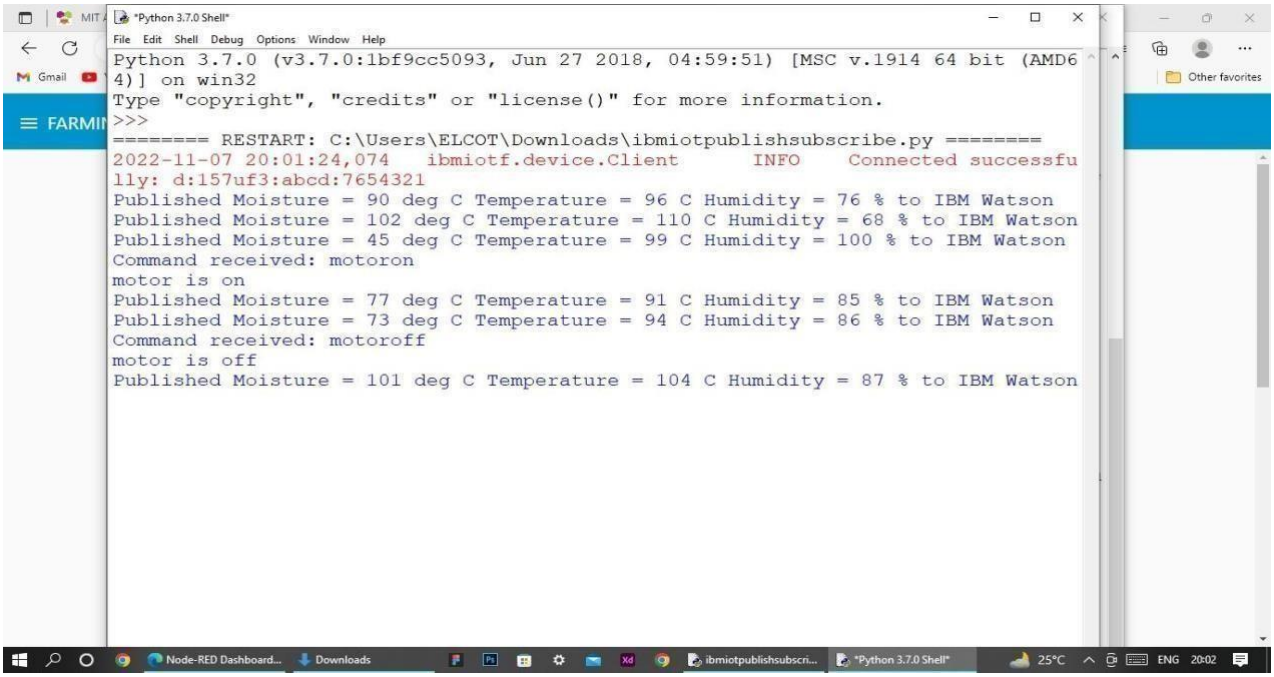
Receiving commands from IBM cloud using Python program

```
import time

importsys

import ibmiotf.application

import ibmiotf.device

importrandom


#Provide your IBM Watson Device Credentials

organization = " nicw4y"

deviceType = " NodeMCU"

deviceId = "12376"

authMethod = "token"

authToken = "harsha@23"


# Initialize GPIO

def  myCommandCallback(cmd):

print("Command received: %s" % cmd.data['command'])

status=cmd.data['command']

if status=="motoron": print ("motor is on")

elif

status == "motoroff":    print("motor is off")
```

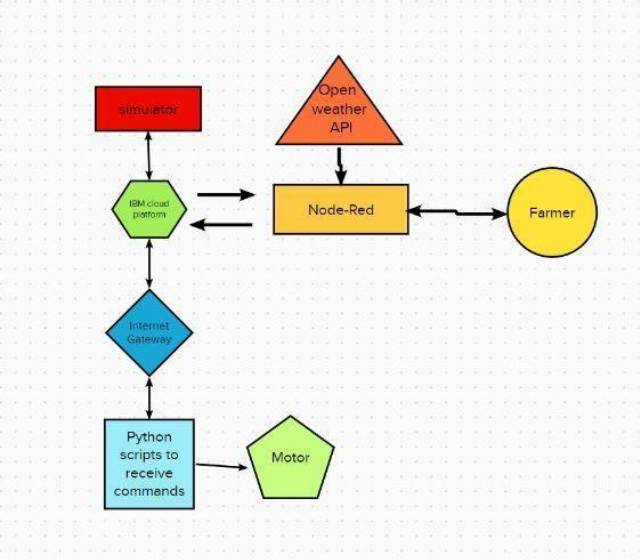
```
else :
        print ("please send proper command")

try:
            deviceOptions = {"org": organization, "type": deviceType, "id": deviceId,
"auth-method": authMethod, "auth-token": authToken}
deviceCli = ibmiotf.device.Client(deviceOptions)
           #.....................................
```

```
except Exception as e:
        print("Caught exception connecting device: %s" % str(e))
sys.exit()
# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting" 10 times deviceCli.connect()

while True:
      #Get Sensor Data from DHT11
temp=random.randint(90,110)
Humid=random.randint(60,100)
Mois=random. Randint(20,120)
   data = { 'temp' : temp, 'Humid': Humid ,
'Mois': Mois}
      #print data        def
myOnPublishCallback():
         print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % Humid, "Moisture =%s deg c" % Mois "to IBM Watson")
        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)        if not success:
         print("Not connected to IoTF")
time.sleep(10)
      deviceCli.commandCallback  = myCommandCallback #
Disconnect the device and application from the cloud
deviceCli.disconnect()
```

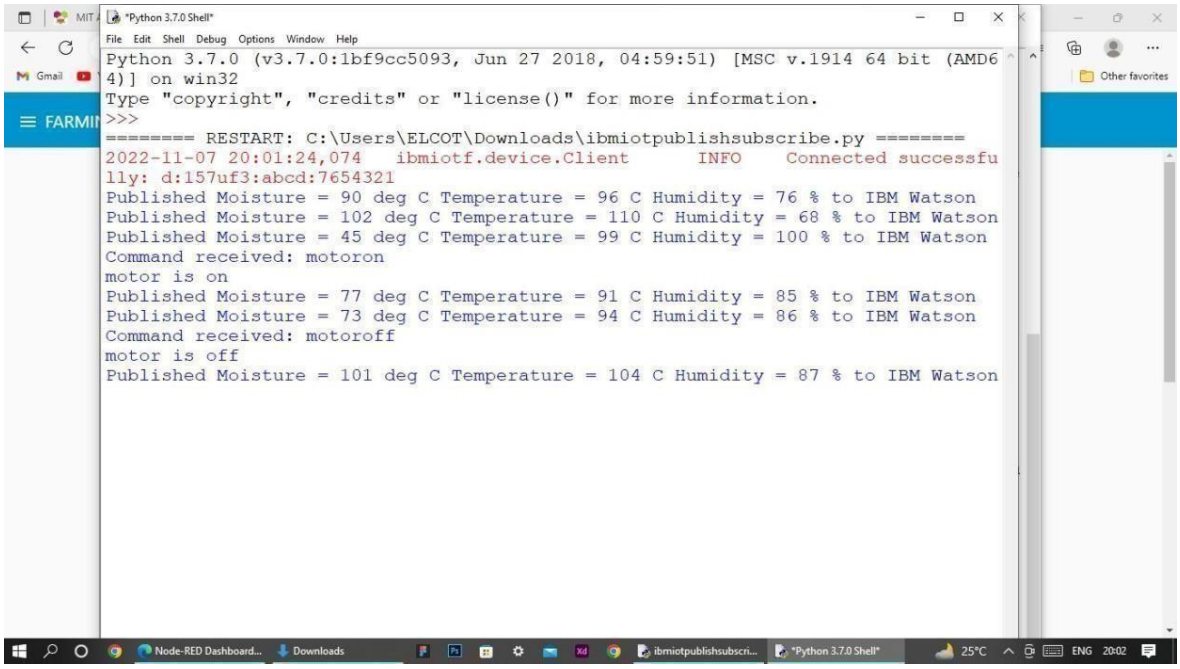
```
# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    elif status == "motoroff":
        print ("motor is off")
    else :
        print ("please send proper command")

try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMe
        deviceCli = ibmiotf.device.Client(deviceOptions)
        #.....................................
```

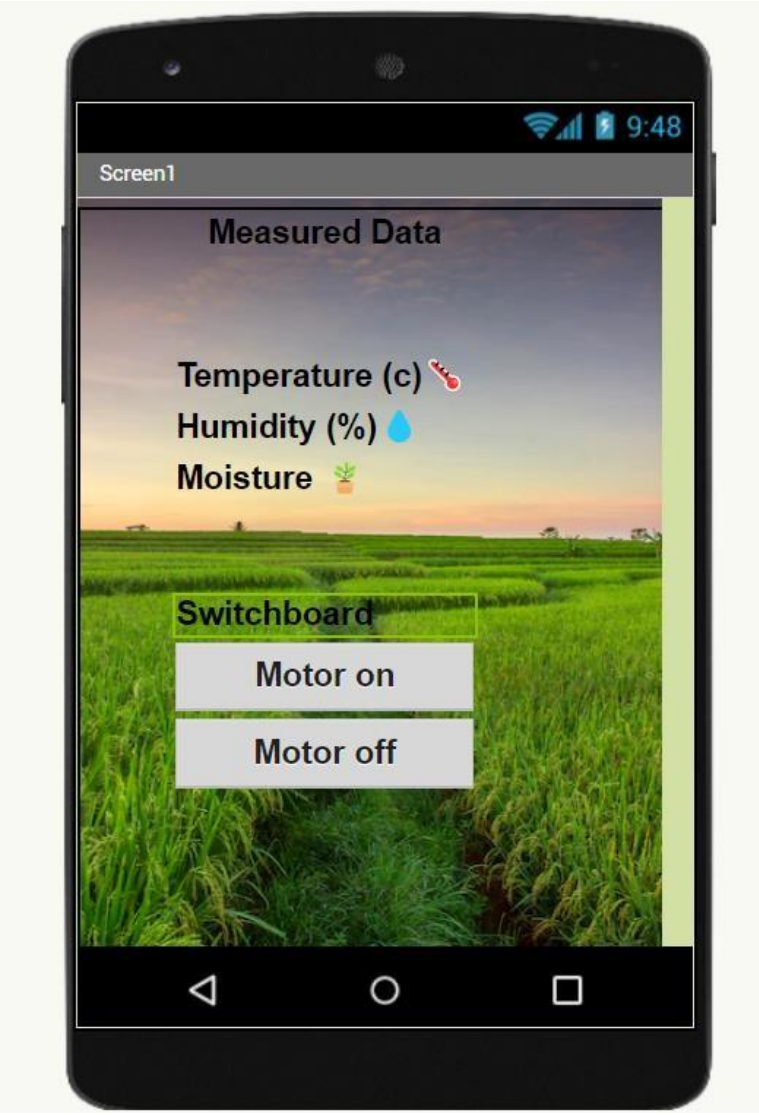


Flow Chart



Observations & Results




9:48
Screen1
Measured Data
Temperature (c)
Humidity (%)
Moisture
Switchboard
Motor on
Motor off

Advantages & Disadvantages Advantages:

- Farms can be monitored and controlled remotely.
- Increase in convenience to farmers.
- Less labor cost.
- Better standards of living.

Disadvantages:

- Lack of internet/connectivity issues.
- Added cost of internet and internet gateway infrastructure.
- Farmers wanted to adapt the use of Mobile App.

Conclusion

Thus, the objective of the project to implement an IOT system in order to help farmers to control and monitor their farms has been implemented successfully.